

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Wireless Telecommunications Bureau Seeks)	WT Docket No. 21-195
Comment on the Impact of the Global)	
Semiconductor Shortage on the U.S.)	
Communications Sector)	

REPLY COMMENTS OF NCTA – THE INTERNET & TELEVISION ASSOCIATION

The comments filed in response to the Wireless Telecommunications Bureau’s Public Notice regarding the impact of the global semiconductor shortage on the U.S. communications industry¹ make clear that semiconductors are a critical input for the delivery of communications services, including broadband. NCTA – The Internet & Television Association (NCTA) echoes the calls of other commenters for the Commission to play an active role in educating other policymakers about the impact of the shortage on the communications sector and on national priorities such as closing the digital divide and ending the homework gap. As the federal government considers mechanisms to address the global semiconductor shortage, the needs of the communications sector should be appropriately prioritized.

I. Comments Reflect that the Communications Sector Is a Major Consumer of Semiconductor Chips and the Shortage Threatens Broadband Deployment and Economic Growth

The recent 100-day supply chain review report published by the White House, as well as comments filed in response to the Public Notice, explain that the communications sector and associated consumer products use approximately 50 percent of semiconductor chips produced

¹ *Wireless Telecommunications Bureau Seeks Comment on the Impact of the Global Semiconductor Shortage on the U.S. Communications Sector*, Public Notice, WT Docket No. 21-195, DA 21-550, at 1 (rel. May 11, 2021) (Public Notice).

worldwide.² This makes sense when you consider that each consumer and networking device typically relies on multiple semiconductor chips for everything from managing operational control, to power supply and network connections. As the comments underscore, given the importance of semiconductors to the communications sector, the global shortage of this critical input is slowing the deployment of some communications networks, reducing the availability of consumer devices that allow end users to connect, and increasing the cost of such devices.³ This situation could become more difficult in the coming months, as broadband upgrade cycles (which will be more extensive and are even more important due to pandemic-driven increases in demand for bandwidth) and federal support for new broadband deployment projects heighten demand for scarce semiconductor chips.

² See The White House, *Building Resilient Supply Chains, Revitalizing American Manufacturing, And Fostering Broad-Based Growth, 100-Day Reviews under Executive Order 14017*, at 24-25 (June 8, 2021), available at <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf>; Comments of USTelecom – The Broadband Association at 2 (USTelecom Comments) (“Even before the COVID-19 pandemic . . . the ICT infrastructure and mobile phone markets collectively accounted for 50 percent of total global semiconductor sales.”); Comments of the Semiconductor Industry Association at 3 (showing a breakdown of the 2020 global semiconductor market, with 31.2% of consumption attributed to communications, 12% to Consumer, and 32.3% to PC/Computer). All citations to comments herein are to comments filed in WT Docket No. 21-295 on June 10, 2021 unless otherwise noted.

³ See, e.g., USTelecom Comments at 4; Comments of NTCA – The Rural Broadband Association at 3-4 (NTCA Comments); Comments of Competitive Carriers Association at 1-2 (CCA Comments).

Commenters describe major extensions in lead-time for obtaining chips⁴ and significant price increases for equipment.⁵ For example, TIA notes that “in general companies are seeing product lead times roughly double with [information and communications technology (ICT)] infrastructure-side equipment going from 16-20 weeks to a 50+ week lead time in the production cycle. . . . [with] reported cost increases of up to 5%.”⁶ Mavenir Systems similarly reports “component costs of up to a three-fold (3x) increase, and extension of lead times from 6-8 weeks to more than 1 year.”⁷ Together, these impacts have led to delays in upgrading existing services, building out infrastructure, or providing new services to customers.⁸ As USTelecom notes, “[b]roadband providers have had to delay customer turn up in some cases. . . . [and] providers find themselves having to seek multiple customer-premises equipment . . . sources to mitigate impacts to their customers.”⁹ NTCA also notes that some providers

have had to compensate for the delay by suspending efforts to build redundancy into their network or halting network expansion efforts. While providers are working diligently and creatively to compensate for current equipment shortages and delays, the longer the shortage and delay remain in place, providers will likely

⁴ Comments of Mavenir Systems, Inc. at 2 (Mavenir Comments); Comments of Rural Wireless Association, Inc. at 1 (RWA Comments), Comments of the Alarm Industry Communications Committee at 7; Comments of Stel Life Inc. at 1 (Stel Life Comments); Comments of the Information Technology Industry Council at 3 (ITI Comments); CCA Comments at 2; Comments of the Telecommunications Industry Association (TIA) at 4 (TIA Comments); NTCA Comments at 3; USTelecom Comments at 2, 3.

⁵ Stel Life Comments at 1; TIA Comments at 4; NTCA Comments at 4; USTelecom Comments at 2, 3.

⁶ TIA Comments at 4.

⁷ Mavenir Comments at 2.

⁸ USTelecom Comments at 4; NTCA Comments at 3-4; TIA Comments at 6; ITI Comments at 8-10; Mavenir Comments at 8; Stel Life Comments at 2; RWA Comments at 2.

⁹ USTelecom Comments at 4.

be faced with making difficult decisions that will negatively impact their communities.¹⁰

Unfortunately, there is no clear anticipated end-date for the shortage, and the biggest associated challenges for broadband providers are likely still before us. Commenters express significant uncertainty about when semiconductor supply will again meet demand, with some forecasting that the shortage could last into 2023.¹¹

An extended semiconductor shortage and associated delays in communications equipment availability would significantly impact the U.S. economy. According to the Internet Association, in 2018, “the internet sector contributed 10.1 percent of U.S. GDP and 4.0 percent of jobs (non-farm employment)” and “supported another over 13.1 million indirect jobs and . . . invested over \$60 billion into the economy.”¹² Those numbers have undoubtedly increased in the intervening years as more of our commercial activities rely on broadband connectivity, a reliance that became particularly pronounced in the last year as many across the country moved their work, education, medical, and social activities to the Internet. As Acting Chairwoman Rosenworcel has put it, “[b]roadband is more than a technology—it’s a platform for opportunity. No matter who you are or where you live in this country, you need access to advanced communications to have a fair shot at 21st century success.”¹³ In order to keep the broadband

¹⁰ NTCA Comments at 3-4.

¹¹ Mavenir Comments at 2; ITI Comments at 5; TIA Comments at 5; USTelecom Comments at 4.

¹² Christopher Hooton, Internet Association, *Measuring the U.S. Internet Sector: 2019* at 3, 7 (2019), https://internetassociation.org/wp-content/uploads/2019/09/IA_Measuring-The-US-Internet-Sector-2019.pdf (noting that for purposes of these estimates, the Internet sector includes wired and wireless telecommunications carriers; data processing, hosting and related services; and e-commerce; among others).

¹³ *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, Notice of Inquiry, 34 FCC Rcd. 10,092, 10,106 (2019) (Statement of Commissioner Jessica Rosenworcel Dissenting).

economic engine running and connect more Americans to high-speed Internet, access to sufficient semiconductors is critical.

II. The Commission Should Champion the Semiconductor Needs of the Communications Industry and Decline to Support Auto-Specific Preferences

As broadband providers continually upgrade their existing networks and expand service to new customers, they will need access to a steady supply of semiconductors. Commenters note that this is especially critical in order to support the nation's priority of rapidly increasing broadband access. Important Commission priorities such as broadband build-out and support under the Rural 5G Fund, the Rural Digital Opportunity Fund (RDOF), the Connect America Fund (CAF), the Emergency Connectivity Fund, and the Emergency Broadband Benefit program can be realized only if sufficient networking equipment is available for broadband providers to build new infrastructure and sufficient consumer devices are available for end-users to access their connection.

The Biden Administration envisions billions more dollars to support broadband build-out as part of the American Jobs Plan,¹⁴ but these funds cannot bring the transformative benefits of a high-speed broadband connection to more Americans without the semiconductors required to power that service. As many commenters noted, the impact of semiconductor scarcity on broadband deployment will likely have a disproportionate impact on communities of color and rural America.¹⁵ New broadband upgrades and deployments to unserved and underserved areas are often a prerequisite to commencement—or acceleration—of digital literacy and digital skills initiatives in local communities. Predicting continued scarcity into the future, some commenters

¹⁴ The White House, *Fact Sheet: The American Jobs Plan* (March 31, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan>.

¹⁵ Mavenir Comments at 8; ITI Comments at 10; TIA Comments at 6.

are already calling on the Commission to provide additional time to meet CAF, RDOF, and other broadband deployment commitments, as well as to satisfy remove-and-replace requirements associated with equipment deemed to pose a national security risk.¹⁶

At the same time, commenters representing the automotive community continue to call for preferences and set-asides to support automotive manufacturing, incorrectly stating that the industry has been “uniquely” impacted by the chip shortage.¹⁷ While the needs of the auto industry are undoubtedly important, automakers’ comments overlook the equally urgent needs of the communications industry and consumers who rely on broadband connectivity to work, learn, and participate in other critical aspects of society. For example, the Alliance for Automotive Innovation claims that “[a]t least some portion of the funding from . . . federal programs should be used to build new capacity in the United States that will support the auto industry and its workers, as well as other sectors that rely on mature nodes.”¹⁸ Similarly, the American Automotive Policy Counsel proposes that a “significant portion of the funding from . . . federal programs should be used to increase the resiliency of automotive supply chains through the construction or support of facilities that produce auto grade chips.”¹⁹

Even apart from their misplaced call for the communications industry regulatory body to prioritize automakers’ interests over those of the industry it actually oversees, sector-specific set-asides for the automotive industry are plainly inappropriate when so many sectors of our global economy are reliant on semiconductor chips, each weathering the same shortage. To the extent

¹⁶ USTelecom Comments at 2, 6-7; RWA Comments at 3-4.

¹⁷ Comments of The Alliance for Automotive Innovation at 2 (Auto Alliance Comments).

¹⁸ *Id.* at 4.

¹⁹ Comments of the American Automotive Policy Council at 7.

such set-asides might reduce semiconductor availability for the communications sector and the critical infrastructure and services it supports, such a policy would conflict with national broadband deployment goals and undermine economic growth. If the pandemic has taught us anything, it is that broadband is the seminal technology of the 21st century and that continued investment in, and support for, broadband networks is critical to fostering economic growth that is both robust and equitable. The Commission should not be swayed by the auto sector's request for preferential status.

Instead, as commenters suggest, the Commission should champion the needs of the communications sector it regulates, using its voice and authorities in support of policies that appropriately prioritize the needs of broadband providers and companies that offer other communications services while the nation focuses on increasing broadband availability and adoption.²⁰ As the federal government considers near- and long-term measures to address semiconductor supply chain challenges, it must appropriately address the needs of the communications sector or risk derailing broadband build-out and delaying the economic benefits of a better-connected nation.

III. Commenters Agree that Congress Should Fully Fund the CHIPS Act to Support Critical Domestic Innovation and Manufacturing

The comments demonstrate clear agreement that the United States must invest in domestic design and production of semiconductors in order to rebalance the supply chain—which currently relies heavily on a limited number of suppliers and a handful of fabrication facilities, primarily located in Asia—and avoid future shortages of this key input. The William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 included

²⁰ USTelecom Comments at 3; TIA Comments at 2, 7; Comments of CTIA at 7 (CTIA Comments); CCA Comments at 3; ITI Comments at 12.

provisions to encourage investment in facilities and equipment in the United States for semiconductor fabrication, assembly, testing, advanced packaging, and research and development.²¹ Those provisions—part of Title XCIX, Creating Helpful Incentives to Produce Semiconductors for America (CHIPS for America)—advance several important policy goals, each of which aims to improve the supply chain for semiconductors.

Many commenters note the importance of future appropriations from Congress to ensure that the necessary investments under the CHIPS Act are made to establish a more secure and reliable supply chain.²² Passage of the United States Innovation and Competition Act (USICA) by the Senate this month with \$52 billion in appropriations to fully fund CHIPS²³—consistent with the amount called for by President Biden²⁴—is an important step forward. NCTA urges the Commission to work closely with policymakers in the House and in Congress as a whole so that these important initiatives can be fully realized in a manner that places appropriate emphasis on the semiconductors needed to support broadband deployment.

Although the Senate-passed version of USICA will be a boon to development of U.S. semiconductor production capacity, the bill prioritizes semiconductor production “at mature technology nodes” and support for semiconductor supply chains that serve vehicle

²¹ See William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283.

²² Auto Alliance Comments at 4; ITI Comments at 2; Comments of Verizon at 5-6; CTIA Comments at 5; TIA Comments at 7-8; USTelecom Comments at 7.

²³ United States Innovation and Competition Act of 2021, S. 1260, §§ 1002, 2506 (as engrossed in the Senate).

²⁴ The White House, *Fact Sheet: The American Jobs Plan* (Mar. 31, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan>.

manufacturing. Consistent with calls by commenters in this proceeding,²⁵ the Commission should urge Congress to avoid such inappropriate set-asides for the automotive sector in any final law. On the basis of comments filed in this proceeding, the Commission should use all of the tools available to it to emphasize the adverse impact of the chip shortage on the broadband industry, the effects that impact is likely to have on federal broadband access and adoption priorities and, by extension, on other portions of the economy.

CONCLUSION

Without appropriately balanced semiconductor supply chain policies, the nation's broadband providers may lack access to the equipment necessary to deploy billions of dollars in new federal broadband buildout investments in a timely way to reach the unserved and close the digital divide. NCTA therefore joins other commenters in encouraging the Commission to use its voice in support of advancing federal policy proposals that will provide sufficient access to semiconductors for broadband.

²⁵ *See, e.g.*, USTelecom Comments at 3 (“[T]he Commission should provide a voice within the federal government to ensure policies are not adopted that favor specific industries’ efforts to obtain semiconductors, such as calls by the automotive industry to prioritize their chipset needs.”); ITI Comments at 1-2 (“[T]he Commission can play a strong role in working closely with the Administration and Congress to ensure that communications sector needs are addressed on equal footing with other affected industries. Industry specific set-asides like those that have been proposed elsewhere could seriously jeopardize important priorities of this Commission, including closing the digital divide, increasing equitable access to telemedicine services and remote learning, enhancing opportunities for communities of color and those living in economically distressed or remote areas, and fostering deployment of next-generation networks for 5G and other wireless services. Any approaches to address the current shortage should be market-based and should not pick winners and losers.”).

Respectfully submitted,

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